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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/778,669	02/07/2001	Francesco Pappalardo	851763.401	4364

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EXAMINER	
HIRL, JOSEPH P	

ART UNIT	PAPER NUMBER
2121	6

DATE MAILED: 07/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/778,669	PAPPALARDO ET AL.	
	Examiner	Art Unit	
	Joseph P. Hirl	2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-31 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-31 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. Claims 1-31 are pending in this application.

2. The claims and only the claims form the metes and bounds of the invention. The Examiner has full latitude to interpret each claim in the broadest reasonable sense. Examiner will reference prior art using terminology familiar to one of ordinary skill in the art. Such an approach is broad in concept and can be either explicit or implicit in meaning.

3. Examiner's Note: Computer technology is generic to the AI art. Coding, storage, scanning, etc. with computers are not novel and are obvious means of processing information. The applicant is strongly encouraged to rethink the claims. The generic nature of the computer art inherent to Sinn-Cheng Lin's paper will be difficult hurdles for the applicant to overcome.

Abstract

4. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The abstract has 214 words.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-31 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The practical application test requires that a useful, concrete and tangible result be accomplished. Claims 1-31 represent abstract methodology and therefore are intangible. The consequence is non-statutory.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

7. Claims 1-31 are rejected under 35 U.S.C. 102(a) as being anticipated by Lin (IEEE 0-7803-5731-0/99 referred to as **Lin**).

Claims 1, 12

Lin anticipates organizing in the structure, for a quantity included among the membership functions and the operands, a corresponding store for storing the values of the quantity which are already available (**Lin**, Fig. 2); and checking, at a time of identification of a new value of the quantity, whether the new value is already present in

the corresponding store (**Lin**, Fig. 2; page V-247, col 1, lines 22-36; page V-247, lines 1-14).

Claims 2, 13

Lin anticipates the operation of identifying the new value with a corresponding value already present in the corresponding store (**Lin**, Fig. 2; page V-247, col 1, lines 22-36; page V-247, lines 1-14).

Claims 3, 14

Lin anticipates encoding the fuzzy inferences and corresponding membership functions; establishing a pointing mechanism from the encoded fuzzy inferences to the corresponding encoded membership functions; checking whether a given encoded fuzzy inference points to an encoded membership function which is already present in the corresponding store; and acting on the pointing mechanism according to whether the encoded membership function is already present in the corresponding store (**Lin**, Abstract, lines 1-22; Fig. 2; page V-247, col 1, lines 22-36; page V-247, lines 1-14; Examiner's Note (EN): fuzzy inference systems are typically implemented using computer technology; computers operate on programming code; pointers in a typical programming environment represent a variable that contains the memory location of some data rather than the data itself; this allows the memory for that data to be dynamically allocated; integrating the computer technology is inherent with Lin's dynamic-linked rule base, establishing Lin's anticipation of the Applicant's disclosure).

Claims 4, 15

Lin anticipates if an outcome of the checking is positive, the operation of redirecting the pointer of the given encoded fuzzy inference towards the encoded membership function already present in the corresponding store (**Lin**, Fig. 2; page V-247, col 1, lines 22-36; page V-247, lines 1-14; EN: see comments in Claim 3).

Claims 5, 16

Lin anticipates if an outcome of the checking is negative, the operation of storing the corresponding encoded membership function, writing its pointer into the given encoded fuzzy inference (**Lin**, Fig. 1; page V-244, col 2, lines 1-10; EN: if the outcome is negative, Fig. 2 defaults to Fig. 1; see comments of Claim 1).

Claims 6, 17

Lin anticipates the encoded fuzzy inferences corresponds to a plurality of encoded membership functions and the operation of acting on the pointing mechanism is carried out for all the encoded membership functions of the given encoded fuzzy inference and for all the encoded fuzzy inferences to be stored (**Lin**, Fig. 5).

Claims 7, 18

Lin anticipates in relation to the operands, the operations of: providing, in the structure, a function for calculating the operands from corresponding calculation parameters (**Lin**, page V-244, col 2, lines 1-10); and disabling, at least partially, the calculation function when it is found that a corresponding operand value is already present in the corresponding store (**Lin**, page V-244, col 2, lines 1-24).

Claims 8, 19

Lin anticipates in relation to the operands, the operations of: providing, in the structure, a function for calculating the operands from corresponding calculation parameters (**Lin**, page V-244, col 2, lines 1-10); configuring the corresponding store for the storage of the operands and of the corresponding calculation parameters (**Lin**, page V-244, col 2, lines 1-24; EN: inherent in the operation of a computer are the operations of calculating and storing); and scanning the corresponding store on the basis of the corresponding calculation parameters, identifying a corresponding operand value already present in the corresponding store on the basis of corresponding calculation parameters already present in the corresponding store (**Lin**, page V-244, col 2, lines 1-24; EN: inherent in the operation of a computer are logic operations that facilitate comparison).

Claims 9, 20

Lin anticipates the corresponding calculation parameters are an input variable of the structure and a pointer to the corresponding membership function (**Lin**, page V-244, col 2, lines 1-24; EN: inherent in the operation of a computer are calculations).

Claims 10, 21

Lin anticipates in relation to the operands, the operation of organizing the corresponding store in the form of a stack organized for an ordered loading of new values of the operands from an uppermost position with downward shifting of the values already present in the corresponding store (**Lin**, page V-244, col 2, lines 1-24; EN:

inherent in the operation of a computer are storage techniques such as FIFO, LIFO, etc meaning stacks).

Claims 11, 22

Lin anticipates when it is found that the new value of one of the operands is already present in the corresponding store, the operation of moving the new value which is already present to the uppermost position of the corresponding store (**Lin**, page V-244, col 2, lines 1-24; EN: inherent in the operation of a computer are storage techniques such as FIFO, LIFO, etc meaning stacks).

Claim 23

Lin anticipates a membership function storage device for storing encoded membership functions (**Lin**, page V-244, col 2, lines 1-10; EN: inference engine contains membership functions); and fuzzy inference encoding means, coupled to the membership function storage device, for encoding the input fuzzy inference into an encoded fuzzy inference, including for each of the input membership functions (**Lin**, page V-244, col 2, lines 1-10: EN: see Claim 1 comments): encoding the input membership function into an encoded input membership function (**Lin**, page V-244, col 2, lines 1-10: EN: see Claim 1 comments); comparing the encoded input membership function to the stored encoded membership function (**Lin**, Fig. 2; page V-247, col 1, lines 22-36; page V-247, lines 1-14); if a stored encoded membership function is found to match the encoded input membership function, then storing with the encoded fuzzy inference a pointer to the matching stored encoded membership function (**Lin**, Fig. 2; page V-247, col 1, lines 22-36; page V-247, lines 1-14; EN: see comments in Claim 3);

and if none of the stored encoded membership functions is found to match the encoded input membership function, then storing the encoded input membership function in the membership function storage device and storing with the encoded fuzzy inference a pointer to the stored encoded input membership function (**Lin**, Fig. 1; page V-244, col 2, lines 1-10; EN: if the outcome is negative, Fig. 2 defaults to Fig. 1; see comments of Claim 1).

Claim 24

Lin anticipates a fuzzy inference storage unit coupled to the fuzzy inference encoding means and structured to store the encoded fuzzy inference (**Lin**, Fig. 2; EN: see comments of Claim 1).

Claim 25

Lin anticipates an alpha storage device for storing alpha values (**Lin**, page V-247, col 1, lines 22-23; EN: if relates to antecedent, alpha to the antecedent values, storage to computers); and fuzzy inference control means, coupled to the alpha storage device and to the membership function storage device, for receiving a fuzzy input, for receiving from the membership function storage device an encoded membership function corresponding to the fuzzy input, and determining whether the alpha storage device stores an alpha value corresponding to the fuzzy input and corresponding encoded membership function (**Lin**, page V-247, col 1, lines 22-23; EN: input relates to an if then rule).

Claim 26

Lin anticipates wherein the fuzzy inference control means includes output means wherein if a stored alpha value is found to correspond to the fuzzy input and corresponding membership function, the output means outputs the corresponding stored alpha value (**Lin**, page V-247, col 1, lines 22-23; EN: input can equal output for an identity function).

Claim 27

Lin anticipates alpha calculation means for calculating an alpha value corresponding to the fuzzy input and corresponding encoded membership function wherein the fuzzy inference control means includes means for interrupting the calculation of the alpha value by the alpha calculation means if a stored alpha value is found to correspond to the fuzzy input and corresponding membership function (**Lin**, page V-244, col 1, lines 11-24; EN: the purpose of Lin's paper).

Claims 28, 31

Lin anticipates wherein the alpha storage device is organized as a stack of alpha values with each alpha value in the stack corresponding to a respective fuzzy input and a respective pointer to an encoded membership function stored in the membership function storage device (**Lin**, Fig. 2; page V-247, col 1, lines 22-36; page V-247, lines 1-14; EN: standard computer application, see comments of Claim 1).

Claim 29

Lin anticipates an alpha storage device for storing alpha values (**Lin**, Fig. 2); alpha calculation means for receiving the fuzzy input and a membership function

corresponding to the fuzzy input and calculating an alpha value corresponding to the fuzzy input and corresponding membership function (**Lin**, page V-247, col 1, lines 22-23; EN: input relates to an if then rule); and fuzzy inference control means, coupled to the alpha storage device and alpha calculation means (**Lin**, Fig. 2), for: receiving the fuzzy input and corresponding membership function (**Lin**, Fig. 2; determining whether the alpha storage device stores an alpha value corresponding to the fuzzy input and corresponding membership function (**Lin**, Fig. 2; page V-247, col 1, lines 22-36; page V-247, lines 1-14); and if a stored alpha value is found to correspond to the fuzzy input and corresponding membership function, outputting the corresponding stored alpha value (**Lin**, Fig. 2; page V-247, page V-248, col 2, lines 16-30; page V-248, col 1, lines 1-41).

Claim 30

Lin anticipates the fuzzy inference control means includes means for interrupting the calculation of an alpha value by the alpha calculation means if a stored alpha value is found to correspond to the fuzzy input and corresponding membership function and the alpha calculation means includes means for outputting the calculated alpha value if not interrupted by the fuzzy inference control means(**Lin**, page V-244, col 1, lines 11-24; EN: the purpose of Lin's paper notwithstanding whatever interrupts) .

Conclusion

9. Claims 1-31 are rejected.

Correspondence Information

Any inquiry concerning this information or related to the subject disclosure should be directed to the Examiner, Joseph P. Hirl, whose telephone number is (703) 305-1668. The Examiner can be reached on Monday – Thursday from 6:00 a.m. to 4:30 p.m.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Anil Khatri can be reached at (703) 305-0282.

Any response to this office action should be mailed to:

Commissioner of Patents and Trademarks,

Washington, D. C. 20231;

or faxed to:

(703) 746-7239 (for formal communications intended for entry);

or faxed to:

(703) 746-7290 (for informal or draft communications with notation of "Proposed" or "Draft" for the desk of the Examiner).

Hand-delivered responses should be brought to:

Receptionist, Crystal Park II

2121 Crystal Drive,

Arlington, Virginia.

Joseph P. Hirl

July 16, 2003

ANIL KHATRI
PRIMARY EXAMINER